

## What is Claimed Is:

- [c1] 1. A method for sharing a single general purpose input/output (GPIO) line of an integrated circuit between at least two circuit components, the method comprising:  
providing, using the GPIO line, a first input from a first circuit component to the integrated circuit during a first time;  
providing, using the GPIO line, a first output from the integrated circuit to a second circuit component during a second time; and  
wherein the first circuit component and the second circuit component are concurrently coupled to the GPIO line.
- [c2] 2. The method of Claim 1, wherein the step of providing the first input includes providing the first input at a low frequency relative to a switching frequency of the GPIO line.
- [c3] 3. The method of Claim 2, wherein the first time is at least in part concurrent with the second time.
- [c4] 4. The method of Claim 1, wherein the first time is different from the second time.
- [c5] 5. The method of Claim 1, further comprising the step of providing, using the GPIO line, a second input from the first circuit component to the integrated circuit during a third time different from the first time.
- [c6] 6. The method of Claim 1, further comprising the step of providing, using the GPIO line, a second output from the integrated circuit to the second circuit component during a third time different from the second time.
- [c7] 7. The method of Claim 1, wherein the step of providing a first input comprises the step of configuring the GPIO line as an input line during a portion of the first time, and the step of providing a first output comprises the step of configuring the GPIO line as an output line during the second time.
- [c8] 8. The method of Claim 7, wherein:  
the portion includes a first sequence of processing cycles; and

the second time includes a second sequence of processing cycles different from the first sequence.

- [c9] 9. The method of Claim 1, wherein the first circuit component includes a switch.
- [c10] 10. The method of Claim 1, wherein the second circuit component includes a light emitting diode.
- [c11] 11. The method of Claim 10, wherein the second circuit component further includes an inverter.
- [c12] 12. The method of Claim 1, wherein the integrated circuit comprises one or more of a group consisting of: a microprocessor, a microcontroller, a field programmable gate array, a programmable logic device, a programmable logic array, and an application specific integrated circuit.
- [c13] 13. A method for sharing a general purpose input/output (GPIO) line of an integrated circuit, the method comprising:  
connecting a first circuit component to the GPIO line;  
connecting a second circuit component to the GPIO line concurrently with the first circuit component;  
wherein the first circuit component is to provide input to the integrated circuit using the GPIO line during a first time; and  
wherein the second circuit component is to receive an output from the integrated circuit using the GPIO line during a second time.
- [c14] 14. The method of Claim 13, wherein the step of providing the first input includes providing the first input at a low frequency relative to a switching frequency of the GPIO line.
- [c15] 15. The method of Claim 14, wherein the first time is at least in part concurrent with the second time.
- [c16] 16. The method of Claim 13, wherein the first time is different from the second time.
- [c17] 17. The method of Claim 13, further comprising the steps of:

configuring the GPIO line as an input line during a portion of the first time; and  
configuring the GPIO line as an output line during the second time period.

- [c18] 18. The method of Claim 17, wherein:  
the portion includes a first sequence of processing cycles; and  
the second time includes a second sequence of processing cycles different from  
the first sequence.
- [c19] 19. The method of Claim 13, wherein the first circuit component includes a  
switch.
- [c20] 20. The method of Claim 13, wherein the second circuit component includes a  
light emitting diode.
- [c21] 21. The method of Claim 20, wherein the second circuit component further  
includes an inverter.
- [c22] 22. The method of Claim 13, wherein the integrated circuit is one of a group  
consisting of: a microprocessor, a microcontroller, a field programmable gate  
array, a programmable logic device, a programmable logic array, and an  
application specific integrated circuit.
- [c23] 23. An electrical circuit having circuit components in electrical communication  
with an integrated circuit, the circuit being adapted to share a general purpose  
input/output (GPIO) line of the integrated circuit among at least two circuit  
components external to the integrated circuit, the circuit comprising: a first  
circuit component connected to the GPIO line; a second circuit component  
connected to the GPIO line concurrently with the first circuit component; the  
integrated circuit being adapted to receive an input from the first circuit  
component via the GPIO line during a first time; and the integrated circuit being  
adapted to provide an output to the second circuit component via the GPIO line  
during a second time.
- [c24] 24. The circuit of Claim 23, wherein the first circuit is adapted to provide the  
first input at a low frequency relative to a switching frequency of the GPIO line.
- [c25] 25. The circuit of Claim 24, wherein the first time is at least in part concurrent

with the second time.

- [c26] 26. The circuit of Claim 23, wherein the first time is different from the second time.
- [c27] 27. The circuit of Claim 23, wherein the GPIO line is configured as an input line during a portion of the first time, and the GPIO line is configured as an output line during the second time.
- [c28] 28. The circuit of Claim 27, wherein the portion includes a first sequence of processing cycles, and the second time includes a second sequence of processing cycles different from the first sequence.
- [c29] 29. The circuit of Claim 23, wherein the first circuit component includes a switch.
- [c30] 30. The circuit of Claim 23, wherein the second circuit component includes a light emitting diode.
- [c31] 31. The circuit of Claim 30, wherein the second circuit component further includes an inverter.
- [c32] 32. The circuit of Claim 23, wherein the integrated circuit comprises at least one of a group consisting of: a microprocessor, a microcontroller, a field programmable gate array, a programmable logic device, a programmable logic array, and an application specific integrated circuit.
- [c33] 33. In a system comprising electrical circuitry and components:  
an integrated circuit having a general purpose input/output (GPIO) line;  
a first circuit component coupled to the GPIO line, wherein the first circuit component is adapted to provide, at a first time, a first input to the integrated circuit using the GPIO line; and  
a second circuit component coupled to the GPIO line, wherein the second circuit component is adapted to receive, at a second time, a first output from the integrated circuit using the GPIO line.
- [c34] 34. The system of Claim 33, wherein the first circuit component further is

adapted to provide the first input at a low frequency relative to a switching frequency of the GPIO line.

- [c35] 35. The system of Claim 34, wherein the first time is concurrent with the second time.
- [c36] 36. The system of Claim 33, wherein the first time is different from the second time.
- [c37] 37. The system of Claim 36, wherein:  
the first time includes a first sequence of processing cycles; and  
the second time includes a second sequence of processing cycles different from the first sequence.
- [c38] 38. The system of Claim 33, wherein the integrated circuit comprises at least one of a group consisting of: a microprocessor, a microcontroller, a field programmable gate array, a programmable logic device, a programmable logic array, and an application specific integrated circuit.
- [c39] 39. The system of Claim 33, wherein the first circuit component includes a switch.
- [c40] 40. The system of Claim 33, wherein the second circuit component includes a light emitting diode.
- [c41] 41. The system of Claim 40, wherein the second circuit component further includes an inverter.
- [c42] 42. The system of Claim 33, wherein the system comprises a communications modem.
- [c43] 43. The system of Claim 42, wherein the communications modem includes the first and second circuit components.
- [c44] 44. The system of Claim 43, wherein the system is a DSL communications system.